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ITEMS OF INTEREST.

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Notes from the Profession.

PROSTHETIC DENTISTRY.

DR. W. W. ALLPORT, CHICAGO.

Extract of an Address before the American Academy of Dental Science.

That mechanical dentistry should have very largely fallen into the hands of an inferior class of practitioners will hardly be wondered at by those who have watched the history of that branch of the practice. Up to about thirty years ago, the mechanical department of the practice required a practical knowledge of selecting and compounding the materials of which the teeth were made; the hand and the eye of an artist were requisite to give them form and color; the management of heat in baking them; a knowledge of the nature of precious metals and skill in working them; and a high order of mechanical talents in applying intricate mechanical laws in fitting and rendering useful the different forms of plates, together with mechanical and artistic skill in so adjusting the substitutes as to subserve the purposes for which they were intended. Since then, the manufacture of artificial teeth has become a distinct business, and they are now simply articles of commerce, bought by the piece, set, or thousand; and to such perfection has this branch of manufactures been carried, that few dentists now think of making the teeth they use. Plates of precious metal, requiring mechanical skill of a high order to manipulate, have, in a large majority of cases, been substituted by plates cast from baser metals, or by rubber vulcanized in molds, these requiring neither a high degree of judgment nor mechanical skill to accomplish results tolerably well limited by the properties of the material used.

As a consequence, therefore, of these conditions, the surgical branch of dentistry, which, when practiced by competent men, allies it to medical science, has been constantly on the advance; while that which is devoted to the setting of artificial teeth has, in the last few years, been steadily retrograding and becoming more and more a trade. And so simple are the modes of attaining tolerable mechanical results

with the methods now usually employed in this department, that a high order of appropriate talent is, at the present time, seldom found devoting much time to it. By this I would not be understood as saying that this latter department does not need improving; for when viewed as an art, he who has but moderate ideas of symmetry or harmony of expression and color is constantly pained by the lack of that artistic selection and arrangement of artificial teeth, which serves to restore to the face the shape and expression left on it by the Creator, the absence of which in artificial dentures stamps him who should be an artist, an *artisan*—a mere mechanic—a libeller of the soul—a deformer of the human face divine.

At the present time there are about twelve thousand practicing dentists in the United States, about two thousand of whom are regular or honorary graduates of either dental or medical schools. To offset the unworthy graduates by those practitioners not graduates who, by study and exertion, have earned a deserved reputation and position in practice, would, I think, form a fair estimate of the really competent practitioners of scientific dentistry in the United States at the present day,—making the number of the really qualified about one-sixth of the entire number. Assuming, therefore, that the one-sixth, as are the members of your Academy, sufficiently advanced in the knowledge of medical science to entitle them to the right to be regarded as special practitioners of medicine, it can hardly be expected that dentistry, as a profession, when taken as a whole, would or ought to be so regarded by medical men.

This claim, while being justly made by some, and freely acknowledged as to a portion of dental practitioners, individually, has, not without cause, I think, been denied to the profession at large. The tastes, habits, and acquirements of the two classes of dental practitioners are as divergent as are the characters of true science and mechanism; the practice of the one being established on a medical basis, while the other relates only to a mechanical art. The practice of either branch, it is true, involves a limited knowledge of the other; but it is necessary either for the surgical practitioner to be a practical mechanic, or the mechanician on artificial work to understand the rationale of medical treatment, or to be an operator. In fact, the practice of both by the same individual prevents the highest development of either as would the time spent in the manufacture of artificial legs by the surgeon, or the compounding, baking, and coloring of artificial eyes by the ophthalmologist, serve but to retard the higher development of their specialties; or an attempt by the maker of limbs, eyes, or optical instruments to practice general surgery or the treatment of the eye, but degrade his own proper art.

As I have before stated, the yoking together of the two callings seemed to be a necessity of the condition of the practice, at the time they were joined, and has resulted in great good. But the development of the practice has now brought us to a point where it is clear a new departure should be taken, the co-partnership dissolved, and each department followed as a distinct and separate calling. Neither in private offices nor in our colleges should the two be taught as *one*, nor should the term "dentist" be retained in our nomenclature.

The true mission of medical science is to preserve or restore health and save life and limb, not to make or have to do with the making of artificial substitutes any further than as they shall be made directly useful in subserving these purposes. Wig-making and the manufacture of artificial limbs and eyes are useful and respectable callings and, when properly pursued, require a good degree not only of mechanical skill, but also of artistic taste; and as well, almost, might the making of these be taught in the medical college as the making of set of artificial teeth form part of the curriculum in a medical specialty. The long association of operative with mechanical dentistry will make it somewhat more difficult, at first, to disconnect them in the minds of the public, than in practice, as separate callings; but no professional act would be so directly instrumental in accomplishing this result as to drop mechanical dentistry from the curriculum of our colleges, and save the time usually devoted to the teaching and practical work in the manufacturing and mounting of artificial teeth, and to other laboratory work, and employ it in giving broader and more comprehensive instruction in the science of medicine in these schools, or else, to incorporate them with the regular colleges of medicine by the establishment of appropriate chairs and infirmaries for clinical teaching.

Let dental mechanics be otherwise taught as a high mechanical art, and the calling fixt in the mind of the public as such, and, in a few years, a patient would as soon go to the maker of artificial legs for advice or treatment in conservative surgery, or regarding amputation, as to the *dentican* or *dentificier*, for advice or services in the saving of his natural teeth, or their extraction.

To drop the teaching of mechanical dentistry in private offices and in our colleges would, in a few years, permanently divide the practice, and very soon each town, of any considerable size, would have one or more of these practitioners who, by relying entirely on success in this calling for support and becoming personally responsible for what they did, would seek to redeem and elevate this particular art to the highest degree attainable, thereby enhancing the respectability and usefulness of their calling. And the *dentologist* would, by the broad and com-

prehensive teachings of medicine, become more thoroughly grounded in its science, and be better qualified to take his rank with the other medically recognized specialists. With this thorough groundwork laid, he would not only be better prepared to treat from a medical standpoint the diseases belonging to his province, but also to grapple successfully by general treatment with those hidden and hitherto ill understood influences which serve to prevent perfect dental development, and also to counteract those pathological conditions which act as causes of disease in the teeth and tend to break down their tissues.

With the development of this higher mission of our profession there will be no occasion for the spectacle of dentology, with the grimace and shuffle of the mendicant, approaching the gates of the medical profession, and, with downcast eyes, begging a crumb of recognition. But with the accomplished separation of the two callings, heretofore combined in our practice, dentology, enriched by the experience and the special literature of the last half century, and the foundation of its practice laid exclusively in the science of medicine, rather than divided between that and a trade, the incongruity of the past, will in a few years, disappear. By deriving its nourishment from the body of which it is a branch, it will become more and still assimilated to the science and the practice of medicine, and, without demand or the asking, there will, both by the public and the medical faculty, be accorded, not to individual practitioners, but to the branch, a full and cordial recognition as a specialty in medicine, which will attract more generally to its ranks, as to an agreeable and useful field of labor, men of earnestness, ability, and culture, the peers of any in an honorable profession.

FAILURE IN FILLINGS.

DR. A. BURGHARD, COLUMBUS, GA.

Several explainable reasons can be adduced for the failure of fillings: too much material, allowing the surplus to hang in ragged edges against the gum, affording a lodging place for decomposing food and deteriorated saliva, an insufficiency of filling material, leaving the filling depressed and the dentine exposed at its most vulnerable point, the improper preparation of the cavity and the faulty manipulation of material.

The enamel at the cervical margin of the tooth is very thin, and when decay has destroyed the dentine to a higher level than the enamel, leaving the enamel thin and uneven, the two should be cut down together, till a solid wall of enamel and dentine can be had at the gingival margin of the cavity. At this point there should be made neither undercuts nor retaining pits, anchorage can be had in the buccal and

palatite portions of the cavity in the dentine near the grinding surface.

Having thus prepared two large proximal cavities, say in the sixth and twelfth year molars above, I proceed by first applying a matrix made of photographers tin which is thin, pliable and easily cut to fit any case.

The mixture is held in position by a wedge driven firmly between the matrix, and the tooth next to the one to be operated on. In extreme cases this wedge will go into the gum, for the matrix in passing the edge of the cavity will go under the gum, and as this is the point of most failure, much care should be taken to have the matrix in absolute contact with the tooth to be filled, and that it should be firmly held there.

If it is desirous to restore the shape of the tooth, which I almost invariably do, waxt floss should be passed around the tooth and matrix to near the grinding surface, a surgeons knot being made each time the floss passes around the tooth.

When the filling is brought down to within one-third of the grinding surface, the last two rounds of the silk, (with bicuspid,) may be cut, which will allow the lower part of the matrix to bulge out a little as the filling material is packt against it, giving the bicuspid that full contour always found at its lower third.

This class of cavities should be filled with a combination of tin and gold, beginning with pure tin, folded narrow and thin. Insert with large, round-pointed, deeply-serrated pluggers, using hand pressure. We all know what the books say about the chemical effect of tin and gold in combination, but, I think the secret of its preservative quality is in its thorough adaptation to the walls of the cavity, and there being no danger of fracturing the thin enamel in its insertion. Put a sufficient amount of tin in the upper part of the cavity, giving it a semilunar shape, to protect the enamel from the blows of the mallet; now, with an assistant, and deeply serrated pluggers, smaller than those used in putting in the tin, no trouble will be experienced in restoring the contour of the tooth with cohesive gold.

The proximal surfaces of these fillings will require very little finishing. I merely run a silver strip over them a few times, with a little polishing powder.

We sometimes see failures in amalgam, because of its faulty manipulation. Mercury is not stable, and if there is a surplus in the filling, it will evaporate, or oxydize, out. This takes place from the surface and around the edges, leaving that space which we so frequently see, between the filling and the tooth.

If the alloy is merely saturated with mercury, and is inserted

with pressure, the surface of the filling will be soft. This shows an excess of mercury, which, if allowed to remain, will evaporate, or oxydize, and cause shrinkage in the filling. This excess of mercury can best be removed with tin-foil, which only combines with, or dissolves out, the excess of mercury, leaving the other constituents of the alloy in the filling.

When the filling has been made sufficiently hard to polish, by removing that excess of mercury with tin-foil, burnish it from the center to the circumference, in every direction, and you have a good, non-shrinkable amalgam filling.

AN ALPHABET OF IMPLANTATION.

MRS. M. W. J.

Avoid scrofulous or syphilitic patients, or those affected by any wasting disease, these conditions being unfavorable to quick or satisfactory healing. —*G. L. Curtis.*

Absorption of the root may be due either to the work of bacteria or to the too active proliferation of bone cells, the root being disposed of as in sponge-grafting. —*G. L. Curtis.*

Bicuspid sockets offer the greatest danger in drilling, the proximity to the floor of the antrum being difficult to determine. —*Ottolengui.*

Best adapted to implantation—a fully developed and healthy tooth, without even incipient abrasion or absorption. —*Curtis.*

Compromise-tissue of a low grade of organization, incapable of taking on inflammation, forms around an implanted tooth and holds it in place. —*G. B. Clement.*

Cutting sensitive dentine is more sharply felt than cutting a socket in the bone for implantation. —*Cornwall.*

Dr. H. C. Horning has successfully implanted a tooth that had been out of the mouth seventeen years, for a negro seventy-two years old. —*E. C. Kirk.*

Dry periosteum is preferable, as the cells would probably imbibe any fluid in which they were immersed, which would be fatal to this life, supposing they revive when implanted. They should imbibe only the natural fluids, and at the proper temperature.—*H. M. Fletcher.*

Expulsive force is at once exerted on a foreign body, introduced into any of the living tissues, and it is gradually thrown out. —*Geo. B. Clement.*

Exostosis and Absorption condemn a tooth as unsuitable for implantation. —*Ottolengui.*

Freshly-extracted teeth are best for implantation, their dentinal fibres and cement being prepared to continue life.—*G. L. Curtis.*

From a wound made in healthy tissues, from which we have healthy exudations, fibrous tissue is developed, and we may safely look for union to follow. —*Sudduth.*

Gums receded from the teeth leave them in a softened condition unfit for implantation, tho' apparently sound. —*Ottolengui.*

Granulations by inflammation of the surrounding bone in the process of drilling, forcing their way into the irregularities in the surface of the implanted tooth assist in its retention.—*Fr. Abbott.*

Herring (Dr. H. C.), says he would rather submit to implantation every six months, than wear a plate; and he speaks from experience.

Histologists, in their recent investigations, seem to show that implanted teeth are held in place by encapsulation.—*E. C. Kirk.*

In implantation, a sound tooth is selected, and a socket made in healthy territory, where there is no retrograde tendency to be overcome. —*Sudduth.*

It seems to me, there is a future for implantation full of promise, notwithstanding the failures reported. —*E. C. Kirk.*

Justified. We are justified in anticipating favorable results, with the control we now have of inflammatory and septic processes.

—*Sudduth.*

J. M. Edmunds suggests the implantation, in edentulous jaws, of lead-coated platinum capsules, as abutments for full dentures

Knowledge of the exact location of foramina and worm canals is very essential in drilling sockets, or severe neuralgia may ensue.

—*Ottolengui.*

Kirk (Dr. E. C.) reports thirty-two cases of implantation, with entire satisfaction to both himself and the patients—and only two failures since November, 1886.

Lease the chips of bone in the drilled socket to form nuclei for the growth of new bone cells, each chip containing bone corpuscles.

—*H. M. Fletcher.*

Long roots with artificial or natural crowns attached may be used where the alveolus is much absorbed. —*G. L. Curtis.*

Molars (lower). Slant the burring instrument toward the tongue, to avoid the inferior dental nerve canal, which here curves toward the outer surface of the jaw.

—*Ottolengui.*

Method of attachment: Encapsulation, followed by bony ankylosis, if inflammatory conditions are kept in obedience. —*Sudduth.*

Nerves being larger than anywhere else in the cuspid region, care should be taken not to drill very deeply even in this apparently safe region, at the risk of painful neuralgia. —*Ottolengui.*

Normal teeth resist the shock of mastication by the cushion of pericementum which is, of course, lacking in an implanted tooth.

—*Sudduth.*

Organized material structurally ready to receive plasm thrown out by the surrounding tissues, constitutes the structure of an implanted tooth, which is not dead in the truest sense. —*J. Taft.*

Overtaxed systems, wasting disease, pregnancy, constitute conditions unfavorable to satisfactory healing and objectionable for implantation subjects. —*G. L. Curtis.*

Plasma thrown out by the surrounding tissues displace the organized material of the implanted tooth, and replaces it with living tissues, as in sponge-grafting. —*J. Taft.*

Proper antiseptic precautions will prevent all danger of impregnating the surrounding tissues with disease. —*Sudduth.*

Query. Might not the root be surrounded by some impervious substance, which would be retained in the jaw, holding the crown after absorption of the root? —*G. L. Curtis.*

Queries. Is not a tooth which has been extracted more than a year a dead tooth? If so, is it not a foreign body? If so, will the living organism accommodate it and grant a living or vital union? I think not. —*Geo. B. Clement.*

Reject all teeth having calcified pulps, or abraded or eroded crowns, or any defects perceptible under the lens. —*Ottolengui.*

Results of a serious nature are likely to follow the introduction of dead matter into the human organization. Nature will not tolerate it. —*Wm. H. Morgan.*

Successful results depend on controlling the inflammatory process so that it shall not at any time exceed that necessary to produce repair of tissue. —*E. C. Kirk.*

Success or failure depends on the nutritive condition of the individual, which varies greatly from time to time. Hence the variable results obtained. —*E. C. Kirk.*

The labial plate in the normal socket is very thin, and should be made so in a drilled socket. Ream toward the laterals for central sockets to avoid the palatal nerve canal. —*Ottolengui.*

Through the excretions, all deleterious agents are expelled from the body; this influence is exerted on all foreign bodies introduced into the tissues. Life and death are repulsive one to the other; under favorable circumstances, however, they compromise to form an immediate organization. This may be so in implantation.

—*Geo. B. Clement.*

Union by ankylosis in of a tooth implanted by Dr. E. S. Chisholm, was so complete that it was removed only by chipping off the alveolar process.

—*B. H. Catching.*

Ultimately the chances are, that the implanted tooth will become thoroughly imbued with the pigment that we find in the normal condition, tho the color may be different at the time of implantation.

—*Dr. Arnold.*

Vascular supply of the cuspid region is derived from vessels which have no fixt canals; drilling must be cautiously done therefore.

—*Ottolengui.*

Vital union must be due to protoplasmic nutrition, and molecular metamorphosis in the dental tissues; that is to say, the pericementum would have to reproduce itself from an original—nothing!

—*Geo. B. Clement.*

Wood or porcelain roots, closely fitted to the sockets, would probably be retained. If the inserted portion was wood, it would undoubtedly be held in place.

—*Berry.*

When the alveolus is atrophied, teeth with short roots and long crowns should be implanted, that the cementum may be completely imbedded.

—*G. L. Curtis.*

Xperiments of all kinds are being tried, especially with artificial roots, as of wood, lead, ivory, etc., to which natural or artificial crowns are attached.

Young teeth should be avoided in the selection of material for implantation, their structure being often poor, and their roots undeveloped.

—*G. L. Curtis.*

Zinc casts of artificial sockets, on which lead capsules are molded, are used by Dr. Edmunds. The capsules are implanted, and when firmly encysted, are utilized for the support of porcelain teeth.

—*J. M. Edmunds.*

Who is the oldest living dentist?—Here in Oswego, N. Y., lives Dr. Warren Allen, who has just passed his ninetieth year. He is not in practice now, having quit work in 1882. I think he was a physician previous to his practice in dentistry.

He was in my office a few days since, to have me put some more rubber on the outside of his upper plate, as he said his lip was falling in, and he was beginning to look *like an old man*.—*T. S. Hitchcock.*

COTTON AS A ROOT FILLING.

In Odontological Society of Pennsylvania. Reported in *Internation.*

Dr. Tees—For many years it has been my practice in filling single-rooted teeth easy of access, to pack a pledget of cotton saturated with carbolic acid in the apical portion of the canal and fill the remainder of the canal and pulp cavity with gutta-percha. In teeth of more than one root, I have been content to fill the opening of each canal with a pledget of cotton saturated with carbolic acid and filling the pulp cavity with gutta-percha. When this has been carefully done, and has been expedient in after years to remove it, the cotton has not been found offensive to the smell. I think it is well that the leading men of the profession are giving up gold as a canal filling. I regard oxy-chloride of zinc as an excellent filling for that purpose, and I endorse Dr. Truman's treatment so far, preferring however, the placing of the cotton and carbolic acid in the apical portion of the canal.

Dr. Boswill—During eight years of my earlier practice, I filled with nothing but gold and tinfoil. Sometimes I had an abscess, and I know the reason—the nerve was not thoroughly extirpated. In some small cavities it is impossible to introduce a broach, and at that time it was difficult to get a good one, as little was known about them. My knowledge of inflammation led me to experiment—to thoroughly extirpate the pulp and leave the cavity open. Many roots which have not been sterilized have given no trouble. I found that whether the pulp was treated with arsenic or not, it made but little difference, the secret of success being in the extirpation of the pulp, and when this was done it did not matter whether you filled the pulp chamber and canals or not.

After a little judgment, and some practice and experience, I commenced to experiment with cotton. The early experiments of Pasteur sufficiently justified anyone in such treatment. He took two pans of milk—one with cotton over it and one without. That which had the cotton over it would stand for days and weeks without any change. That which had nothing over it, and came in direct contact with air was soon changed. Another thing I know, cotton can be worked as thoroughly—can be packed so solidly that you cannot get moisture into it. Knowing the difficulty I had in a great many small cavities of getting gold and tin to the apical portion of the canal, and the occasional trouble I had with them afterward, it led me to go into the treatment with cotton, there being no trouble in packing a fibre of cotton. With it I have saved without abscess ninety-five per cent. of the cases that have come to me. It has done for me what I am perfectly satisfied I could not have done with any other material. You cannot pack gutta-percha nor get the chloroform mixture there except

in a large canal. When it becomes necessary to open into any canal filled with cotton you will find it an easy operation. If filled with gold, as soon as you put the dental-engine on it and heat it up, it will throw out gas, showing that the tooth substance has absorbed gases. Cotton cannot do any more. I can recall many instances where I put in cotton many years ago, and it has never given any trouble.

COTTON AS A ROOT FILLING.

DR. J. REED, PHILADELPHIA.

Extracts of a paper in the Odontological Society of Pennsylvania.

Firstly, it can be easily removed. Secondly, it can be thoroughly permeated with medicaments which will not only destroy septic matter, but prevent its entrance.

It has been said that "The medicament evaporating, leaves the cotton unguarded.

Gentlemen, have you ever heard of carbolized cosmoline? and will you kindly inform me what is its daily rate of evaporation?

It is with carbolized cosmoline that cotton dressing should be soaked.

The late Dr. H. A. Randolph boiled a frog's foot in pure cosmoline to destroy any putrefactive germs which might remain, and then allowed it, covered by paste, to stand for an indefinite time. Week after week the foot stayed unchanged, the experiment proving that cosmoline is aseptic in the highest degree, and that a sterilized body placed in it will remain intact so long as it is covered.

The use of cosmoline in canals is not original with me, but was first suggested by Dr. St. George Elliot, of London.

Having now given you my defense of cotton dressings, let us proceed to consider how and when they should be inserted.

Any practical method of cleaning and sterilizing the canals may be used, but where the pulp has putressed, I invariably employ the gradual stopping process, which is so clearly explained by my beloved and respected friend, Dr. Flagg. Of course, you are familiar with it; but to keep the links in my chain of evidence perfect, with your permission I will explain his manner of treatment, which has the advantage of cleansing with equal thoroughness, the small and large canals.

The tooth must first be opened and the floor of the pulp chamber so burred, that the mouths of all the canals visible or invisible, shall be exposed.

Then if considered practicable they can be enlarged, extreme care being taken not to puncture the cementum.

At the first sitting, all the decomposing material that can be reached, should be removed. And after the passages have been thoroughly

washed by streams of warm water squirted into them from the syringe, they should be dried and protected by the napkin or dam. Finally being filled loosely with a cotton dressing thoroughly soaked in pure carbolic acid, or whatever medicament may be preferred.

Extremely sensitive teeth with open canals, have yielded to this treatment again and again, becoming sound and painless in a few days. Should the tooth resist the first treatment in the morning, allow cotton to rest in the canals very loosely, and tell the patient to return at eleven, when the treatment again being performed, the pain will, in almost every instance, abate.

By this method the hair-like canals are perfectly cleansed: for the organic matter purifying in them is each day washed out, while each cleansing is followed by an application of carbolic acid, which if the tooth is dry, will go into places inaccessible to cotton.

With these means I think you will confess that any canal, no matter how minute, can be cleaned and sterilized. This being accomplished and the last dressing allowed to remain, the tooth should be temporarily filled with gutta-percha or cement for a length of time sufficient to test the thoroughness of the work; which having been satisfactorily demonstrated the tooth may be permanently filled. The details are as follows:

Put on the rubber dam, remove dressings and blow hot air into the tooth till it becomes painful. Then, using a hypodermic syringe filled with warm carbolized cosmoline, pump the canals full.

In dealing with the large canals this will be an easy process. In those of a small diameter the passage of the cosmoline to the apex will be aided not only by capillary attraction, but also by the contraction of the cooling air. By finally pressing a pellet of cotton soaked in cosmoline over the small orifices, and then inserting a minute shred of cotton wherever possible, it seems reasonable to suppose that the canal can be filled to the apical foramen, with an antiseptic substance sufficiently viscid to exclude moisture from without. Cotton should then be packed in the large canals to act as a support for the medicament.

The canals should be filled with cotton to the pulp chamber, and a small pellet soaked in cosmoline placed over the orifices of those which are too small to allow the entrance of a thread. The cavity should now be washed with chloroform to remove superfluous grease, and the pulp chamber filled with gutta-percha or cement. I connect the mouths of the canals with protected cotton to expedite venting, should it be necessary. This is merely my personal preference. It is not essential. The filling to be used in conveying the contents of the pulp chamber of course must vary according to the individual peculiarities of the tooth.

How is it possible for a tooth thus treated to need venting?

Because in every case there is a strong probability that the outer portion of the apical foramen may be unprotected, and, moreover, the place where the living and the dead tissues join is always a weak spot. And after all has been said and done, and the grertest care has been used, a gouty, lymphatic or plethoric patient may most unexpectedly give us a very serious example of peridontitis.

Dr. Truman. Before filling a canal it must be properly treated, and no tooth is properly prepared where the canal is not free from decomposed tissue. As the dentine is made up of innumerable tubes, and that these contain organic matter, if this material, undergoing decomposition, is not included in the treatment it becomes a constant source of danger to the tooth. It is necessary to reduce this to an insoluble compound, and this is best done by keeping the canal under the action of oxy-chloride of zinc. This, in my judgment, is at present the best known filling material for canals. I am aware cotton is a good filter for micro-organism, and as long as it is not disintegrated in the canal it may be an effective agent; but when this does occur the results are exceedingly disastrous.

Dr. Kirk. Filling root canals with cotton armed with carboized cosmoline, is, in my judgment, no argument in favor of cotton, but one in favor of cosmoline. The cotton is merely incidental, in the same way it is often used in connection with oxy-chloride of zinc, viz: as a vehicle for carrying to place the real filling material, which is the cement. Cosmoline is a heavy hydro-carbon oil, totally unalterable in air or moisture by virtue of its non-affinity for oxygen. It is sufficiently viscid to remain in the canal almost without the help of the cotton, which, in its relation to the cosmoline, fulfills the same function as the old root filling of gold saturated with gutta-percha solution.

In its general characteristics, a root filling of cosmoline and cotton would be very similar to that of paraffine, which is exceedingly valuable, and can be pumped in a melted state into the finest canal—with the advantage that when it is chilled and solidified it is denser.—*International.*

Saving Teeth.—On page 236, ITEMS OF INTEREST for May, W. L. Marshall asks: "Should I have extracted them?" Referring to three teeth, two of which, at least, were of value to the patient, beyond compute. *No*, he was criminally hasty, and not at all fit to have charge of anyone's teeth. Extraction should be the *very last* resort after weeks of patient endeavor to save. Probably three days would have been sufficient in this case.

O. B. HEWETT.

Dallas, Texas.

DESTROYING AND REMOVING DENTAL PULPS.

DR. J. A. FREEMAN, CHICAGO.

When called upon to devitalize the pulp of a tooth, the manner of procedure will depend upon conditions—whether the exposure be of long standing or recent, for if of long standing there probably has been pathological change of the pulp, rendering a certain course of treatment necessary before that of devitalization; whether if there be such change it be in the form or state of congestion, or hyperaemia, whether hypertrophy has resulted, whether a portion of the pulp be in a putrescent condition, etc., for while these conditions will, to most practitioners indicate that devitalization is best, and for the most part will result, still there are other steps indicated as preliminary or preparatory.

We should make it our object to devitalize the pulp with the least possible pain to our patient, and with as little loss of time to ourselves as may be.

Then again we desire to avoid complications. For instance, discolorations caused by infiltration of the tubuli by disorganized blood, and again by the complication of irritation of surrounding membranes. Hence, when the case has been decided and we have determined to destroy the pulp, we should endeavor to reduce the inflammation and restore the normal conditions as nearly as we may deem desirable, and then proceed to the work in hand.

There are two general processes by which this result is reached, namely: that of immediate extirpation by use of instruments direct, while the patient is in a partial or complete state of anesthesia, or by the use of a local or circumscribed anesthetic; as, for instance, muriate of cocaine crystals or powder dissolved with carbolic acid, in the carious cavity in the anterior teeth and allowed to remain from ten to thirty minutes; this will in many instances produce perfect anesthesia of the pulp, if the exposure be recent. I say anterior teeth, because this has been my experience, while with the molars I do not find the same result.

The other process is by the use of an escharotic.

Each of these processes has its disadvantages and its peculiar difficulties.

There are several escharotic agents that may be used, but of them all, arsenious acid is usually employed, and it has been in general use for more than fifty years, as stated by Taft in his work on Operative Dentistry.

The rubber dam should be applied, the cavity thoroughly dried and cleansed of all extraneous matter, the pulp fully exposed by

removing the decayed tooth substance, so that the escharotic agent may be placed directly in contact with the pulp. Arsenious acid in combination with morphia,* equal parts (either sulphate or acetate, some preferring one and some the other), and carbolic acid in sufficient quantity to make a thick paste, is recommended. Muriate of cocaine may be added. The latter are used for their anesthetic effects, and serve us very satisfactorily in this capacity.

Arsenious acid, iodoform and carbolic acid crystals, in equal parts, and alcohol sufficient to make a thick paste, are recommended by the latest works on Operative Dentistry. The precise mode of action of arsenious acid is not well understood. It is a powerful escharotic, "so much so that tho applied quite remote from the pulp, and in very small quantities, even so minute as to escape detection by the most delicate tests, it seems to have the power to destroy the pulp when the same quantity would seem to have no influence on other tissues." Probably the action is in the line of irritation and consequent stimulation of the circulation, causing, as it is thought by some, strangulation, and later, disorganization of the corpuscular elements of the blood, infiltration of the tubuli, resulting in some instances. Hence the peculiar discoloration sometimes met with when the pulp is not fully exposed, so that the disorganized blood cannot escape. Dr. Ingersoll thinks that thrombosis resulting from the peculiar irritation causes the death of the pulp, and accounts for the gradual death toward the apex in this way. It is not improbable, because, as he says, if by strangulation, then devitalization would be complete from the apex or point of strangulation, which we know does not occur.

The mode of applying the paste for the destruction of the pulp, is by many, to use a small portion, working it carefully down on the pulp and pricking it into the pulp tissue with a small instrument. It should be covered with some kind of stopping material, to keep it from working out on the tissues surrounding the tooth. The material should be impervious to the fluids of the mouth. Cotton, saturated with sandarach varnish, is used for this purpose.

A very good plan is to fix a metallic or other inflexible cap to cover the exposed pulp and paste, so that there may not be pressure directly on the pulp by the stopping used, which may be forced down upon it while the process of mastication is going on.

It is a very good plan to allow the rubber dam to remain a short time after the application is made. Evaporation of the alcohol will take place to some extent, and the mass become stiffened so as to

* Our experience is that morphia is of no value, but rather is often a trouble, some irritant, as it is to all raw surfaces.—ED. ITEMS.

adhere to the margins of the cavity, and more perfectly close it against the fluids of the mouth.

In cavities where but little protection can be had to retain the paste and stopping (as on broken or fractured incisors), oxyphosphate may be used. It may be used in all cases, but, owing to its hardness and the consequent trouble of removing, it is not best to use it generally. Gutta-percha and Hill's Stopping are recommended by some, but I do not find either a desirable material to use where there is an exposure of the pulp.

The application should be removed in from twenty-four to forty-eight hours, the cavity well cleaned, the pulp cavity fully opened, and if the pulp be in a sufficiently insensible condition to admit of it, we should cut it away with the engine burr at this time.

A light application should then be made to the remaining or root portion of the pulp, and stopt as before, and the patient instructed to return in twenty-four hours. At this sitting the remaining portion may be removed if not too painful. If we are not able to do so, the application should be repeated, and may be allowed to remain forty-eight hours longer, but it would be better to see the patient again in twenty-four hours.

At the next sitting, if unable to remove the remaining portion, an application of some mild antiseptic agent (usually eugenol or oil of cloves is preferred). This application may remain four or five days, and may be repeated until sloughing has taken place at the apex, when the root branches may be removed with little difficulty, using broaches prepared by filing, those we find at the dental depots being too large to pass up the canals to the apex. Broaches should be barbed sufficiently to catch up the tissues and wind about the broach, as it is turned carefully, so as not to break the broach off in the canal by too vigorous twisting.

After the canals are perfectly cleaned, disinfected, and dried, the cavity is ready for the introduction of the filling material, the orifices of canals should be enlarged by proper drills to facilitate the introduction of the filling.

Two other methods are mentioned by Evans on bridge and crown work:

1st. Instantaneous devitalization by use of an anesthetic, nitrous oxide preferred. A smooth broach is passed to the foramen, and by rotation the pulp is lacerated. A pellet of cotton, saturated with carbolic acid, is instantly forced up the canal. The pulp is said to be found in twenty-four in a coagulated mass, and is easily removed entire.

2d. Orange wood, prepared by shaping to fit the canal as near as may be, and saturated with carbolic acid, is quickly driven into the

canal to the apex. When the wood is withdrawn the pulp usually adheres. Should it not do so, the wood is quickly re-inserted, and cut off. It is then drilled out with a Gates-Glidden drill, the pulp coming away at the same time. This manner is recommended after excision of the crown, preparatory to placing a bridge or crown upon the root thus treated, and is mostly confined to teeth with single roots, and where the exposure is recent. I cannot speak from experience of either process.—*Dental Review*.

THE DENTISTS OF JOHNSTOWN.

Philadelphia, June 13th, 1889.

DEAR DOCTOR T. B. WELCH:—I returned home yesterday from a trip to Johnstown, where I spent several days in viewing the horrors of that place, and gathering data. I cannot describe the scene. Unless you are actually on the spot, you cannot possibly conceive of the magnitude of the catastrophe that has stricken that region. The pen pictures that have been drawn do not exaggerate the realities. They are simply heartrending.

Of the dentists in Johnstown Dr. Wagner was the only one drowned, and nine of his family with him. All the other dentists, none escaped with their lives, some losing a portion of their family, and all losing their property.

As sad a case as any I know of is that of Dr. Poland, one of the dentists there. He, with his wife and two children, three and five years old, lived in a three-story house in the heart of the city. They were preparing to leave it when the crash came. They saw their house split open from the roof to the foundation and crumble to pieces just as they escaped from it. Then they were caught in a huge pile of lumber, which pinned them as in a vise. The father held a child in each arm as the lumber pile was washed along on the raging torrent, so fastened that he was powerless to aid either them or himself. They floated around for a time, one moment under water, next with heads above, until they struck a standing house, on the roof of which were a number of persons, who sought their rescue. The father was first taken from the wreckage with the two children, and the mother, after a desperate struggle, was also released; both were laid unconscious on the roof. As the mother recovered, she saw her husband vomiting blood, and her loved children both dead at his side. Imagine the doctor's feelings as he clasped his darlings to his bosom, and felt their death struggles in his arms as they slowly drowned!

Mrs. Poland accompanied our party to Philadelphia in our special car, a donation of \$50.00 being made to her en route.

I enclose an appeal for aid from the Pittsburgh dentists, which please publish in July ITEMS.

J. F. FRANTZ.

THE JOHNSTOWN CALAMITY.

Pittsburgh, June, 1889.

TO THE DENTAL PROFESSION AND MANUFACTURERS AND DEALERS
IN DENTAL GOODS:

A terrible calamity has swept a once populous and prosperous city almost out of existence. Johnstown, Cambria County, Pa., which, with its suburbs, contained about 25,000 inhabitants, is in ruins, thousands of lives lost, and millions of dollars' worth of property destroyed.

In this ruin, our professional brethern have had their share. Johnstown contained ten practicing dentists; one lost his life, others lost parts of their families, most of them lost all their property, and all have lost their practice, at least for a long time to come.

The members of the profession in this vicinity, while recognizing the fact that nearly all have already contributed to the general relief fund, yet think, that as a simple act of justice, the profession at large should step in to the relief of our professional brethern in distress, not as an act of charity, as that word is generally used, but in a higher sense, as brother to brother.

The undersigned have been appointed a committee to present the matter to the profession and dental trade, and to receive subscriptions for the purpose named.

We think the cause needs no urging on our part, believing that each and every one will be glad of the opportunity to cast in his mite.

We need hardly add that our action is taken without the knowledge of the sufferers at Johnstown.

Subscriptions may be sent to the treasurer, in drafts, orders, etc., made payable to his order.

Very truly yours,

W. F. FUNDENBURG,

J. G. TEMPLETON,

H. W. ARTHUR.

J. S. GOSHORN,

LEE S. SMITH, *Treasurer.*

52 South Sixth St., Pittsburgh, Pa.

The New Jersey State Dental Society will be held at the West End Hotel, Asbury Park, commencing Wednesday, July 17, 18 and 19. Prominent dentists from throughout the country will read interesting papers, and the clinics will be more than usually instructive. Everything new and useful in operative and mechanical dentistry, will be exhibited by the inventors and dental supply houses.

CHARLES A. MEEKER, *Secretary.*

HISTORY OF DENTAL DEPARTMENT OF HARVARD UNIVERSITY.

BY DR. L. D. SHEPARD.

Twenty years ago but one school, our own, had any connection with a classical university. Now eighteen claim medical colleges, leaving seven distinctly dental colleges. To-day no college is considered respectable, or are its diplomas recognized by the examining boards of the states, which graduates a man, no matter how many years of practice he may claim, except after actual attendance on two courses of lectures in separate years. In important advances, our institution has generally been a leader, and always has warmly seconded advance proposed by another school. In his annual address to the Massachusetts Dental Society in 1865, President Nathan Cooley Keep, since deceased, gave the first expression to a feeling which existed in New England, that students in dentistry should not be required to go to distant states for their education. The name of Dr. Nathan Cooley Keep, should be cherished by us above that of any other dentist who ever lived in Boston. The starting of the Harvard Dental School was mainly the result of his efforts. It is doubtful if success would have followed other leadership.

In 1869 it was voted that "*dentariæ medicinæ doctor*" (D. M. D.) be recommended to the board of government of Harvard University, as the title for the degree to be conferred on the graduates of the dental department, and the corporation established this degree. It was first proposed to make the degree "*scientiæ dentium doctor*," so that the initials would remain unchanged. But this would be liable to the same charge of being a new degree, and, besides, dentistry was not properly a science.

In 1857, the house, 50 Allen Street, was bought (with borrowed money) and altered to adapt it for lectures, and large and complete mechanical laboratory and general headquarters for the school. In the fall of 1871 the corporation voted to abolish the universal custom of allowing a practice of five years as equivalent to the first course of study, and the graduating of students after attending one course at the school. This was the most important innovation ever made in its good influence in the profession and the colleges. It was equally important in its disastrous effect, pecuniarily considered on the school, and the faculty considered that it had been a great hindrance to progress. The Harvard school was the first, and for many years the only one, to enunciate the truth, and at great expense to itself; and the college was designed to educate the young incomers to the profession, not simply to supply the doctorate to skilled handiworkers who had practiced without a degree for five or more years. On November 13, 1871, owing to ill health, Dr. Keep resigned, and was succeeded by Dr.

Chandler. One of the important changes made in the year 1872, was the election of Dr. Hitchcock as dean. Early in February of the same year, the faculty voted to request the corporation of Harvard University to assume the management of the financial affairs of the dental school. Up to this time, this had been attended to by the dean and the faculty.

The school suffered its greatest loss in the death of the professor and dean, Thomas Barnes Hitchcock. He put his whole soul into his work. He impressed his personality on every student. He was a partisan, but always for the school and its interests. He was warm-hearted and affectionate to his friends. He was bold and outspoken in opposing what he considered wrong. When weakened by disease, he gave no heed to the warning of his friends, but kept right on. He was a martyr to the Harvard school, to professional education, and to dental progress. Dr. T. H. Chandler was elected as Dr. Hitchcock's successor in July, 1874. While the changes and advances of which I have spoken had placed Harvard in the van, the faculty still felt that more was required to bring the methods nearer to their ideal. After much study and consideration, the society voted in 1875 to recommend an entire change in the curriculum, and the scheme then adopted has been in operation ever since, but few slight modifications having from time to time been considered necessary. It has resulted in securing fine scholarship and excellent skill. I have spoken of the invaluable assistance of the medical faculty in the origin of the school. The same generous spirit has marked all the succeeding years, resulting not only in moral support, but in valuable pecuniary assistance. The school could not have been carried on without this aid, unless money had come from some other source. On the completion of the new medical building, the medical faculty gave to our school the free use of the old medical building on North Grove street, where is now carried on all the work of the second and third years of the dental school, both the didactic teaching and the practical operative or infirmary teaching and practice. The true principle of our school was aptly expressed by President Eliot in one of his annual reports: "The University should be more concerned to have a very good school than a very large one."

There are now sixty of its graduates occupying prominent positions as practitioners in Boston alone. With the exception of certain subordinate assistants, who could not afford to do otherwise, and some small salaries in recent years, the gentlemen who have devoted so much of their time and labor to the school have done so gratuitously. All the fees from students were needed for current expenses. The instructors, past and present, can truly claim that the work which

has been accomplished by the Harvard dental school—its great charity to the suffering poor, its elevating effect on the higher professional training everywhere, and the higher standard of professional skill in Boston to-day—is their own work, and at their own expense.

A CASE OF REFLEX ACTION.

A lady about 30 years of age, who had been suffering pain in her left ear for two weeks, called on me to make an examination of her first left inferior bicuspid which was also troubling her. I found the tooth only slightly sensitive to the tap of an instrument, but otherwise normal in condition. As my patient was wearing an upper set of artificial teeth, I concluded that the trouble complained of came from imperfect occlusion and ground off the antagonizing tooth to test the matter; also painted the gums with iodine. She called on me the next day and said she had experienced no relief from my treatment, when I became anxious to determine whether the pain, of which she complained, did not come from her ear. To determine this question I consulted the specialist who was treating her ear—which was now much more easy—and we decided that the case was not one of a reflex character. I then adopted a thorough course of external treatment and kept it up for three days without affording my patient any relief. As a last resort I made an opening, from the margin of the gum into the pulp canal, and a free discharge of purulent matter followed. This gave the patient instant but only temporary relief. After treating the dead pulp for some time without any perceptible advantage, I reluctantly consented to extract the tooth, the patient insisting on my doing so. There was a sac attached to the root-membrane which accounted for the trouble. The singular part of this case comes from the fact that the tooth, up to the time of her ear commencing to ache, had developed no uncomfortable sensations—no feelings of elongation, no intermittent pain.—*Practical Dentist.*

The Pennsylvania State Dental Society will be held at Cresson Springs, Cresson, Pa., beginning Tuesday, July 30; session, three days.

P. C. FILBERT, *Cor. Secretary.*

Minnesota State Dental Association will be held in Duluth, on July 10th, 11th and 12th. Members of the profession are cordially invited to attend.

L. D. LEONARD, *Secretary.*

The New York College of Dentistry, at its last session, had the unprecedented number of two hundred and forty-five matriculated.

RE-CAPPING PULPS.

W. MITCHELL, LONDON, ENG.

EDITOR ITEMS OF INTEREST:—

I quite agree with the query of Dr. Robinson, in your current number—re-capping pulps.

It is quite a legitimate practice, especially in malarious sections, where the difficulties of treating pulpless teeth are greatly increased. Pulp capping is an operation that requires the most careful manipulation, but it need not be any the less a success on that account.

There is a great deal to be said, both for any against it, but, as each case must be treated upon its merits, the dentist that is deficient in diagnostic capacity, will frequently find himself in deep water.

There are, undoubtedly, too many pulps destroyed. This in many cases is unavoidable, owing to the unreliability of patients in furnishing correct information, whereon to base our diagnosis. Instead of the periodic crazes that sweep regularly over our profession, as the emancipation of unevenly-balanced minds, there should be an approach to the "happy medium."

The most successful man does not find a panacea for all peripheral irritations in de Jones' pulp paralyzer, neither does he see in Brown's patent duplex cautilever dental bridge, with pontoon plumper attachment, the best thing out for restoring oral deficiencies.

The adage, "Prove all things; hold fast that which is good," should find universal application in the dental profession, by being elective in practice, having a reason for pursuing a certain line of practice, with a liberal application of common sense, will assist materially towards success, and curtail the number of equivocal ideas that too frequently see the light.

Test for Impurities in Mercury and process for removing: Pure mercury, so called, is seldom if ever sufficiently pure and should be carefully tested before using. Lead, the most objectionable metal, is the one generally present in mercury. Lead impairs the edge strength of high grade amalgam alloy. If sulphurated hydrogen does not act on hydrochloric acid previously boiled on the mercury, the absence of contaminating metal is shown. Mercury may be purified by placing it in a shallow vessel, such as a saucer; pour on it a weak solution of nitric acid: nitric acid two drachms, water, eight drachms; allow this to stand about three hours, agitating the mercury from time to time with a glass rod or small stick, then pour off the acid, wash the mercury with pure water and leave in a shallow vessel to dry, or absorb the moisture with bibulous paper, and bottle at once. This formula will be sufficient to purify six or eight ounces of mercury.

If the mercury to be purified is dark looking and has on it a dark looking powder, it should be forced through a chamois skin to free it from this oxide before subjecting to the acid.

If the solution of nitric acid with which the mercury has been treated yield a white precipitate on the addition of sulphuric acid, the presence of lead may be known. Repeat the process from time to time till no precipitate is obtained.—*Dr. R. B. Adair, in Archives.*

OFFICE MANNERS.

MRS. JOHN T. BENSON, EAST NASHVILLE, TENN.

Is the tip of the tongue the magnifier, or is it the imagination? As children, when the trebled and twisted thread had done its duty, when one agonized squeal had been fetched, and the tooth dangled from mother's hand, we remember wondering how it could look so small and white and yet do such terrible damage in its upheaval, for was not the newly-made cavity, into which the tongue was thrust curiously every few seconds, alarming in its proportions? And now when the dentist has applied saw and pick and buzzing horror, is not the hole drilled in your molar—by the most careful measurement of which your tongue is capable—at least as large in circumference as a good-sized lead pencil?

That the gift of magnifying is one quite common to mankind, and that it seems to enjoy full play in a dental office, are facts by no means as insignificant as they appear on first thought, for the humane dentist, dreading the work before him, as his patient is likely to suffer, is glad of any clue, by which he may soothe the excited nerves or better in some way the condition of his shrinking victim. Be careful, then, of words and looks at the beginning; indeed, *most* careful then.

For example, with a sigh that comes from my heart (alas, how often have I given it in reality), I seat myself and drop my heart on the cushion. You have changed your coat, washed your hands elaborately at the corner washstand, and are now beside me with a small tool in your fingers, whose very gleam contains something most deadly to my fixed eye. Yes, it can be put off no longer, you are waiting; plainly waiting on me, and I must open my unfortunate mouth. You begin to poke and pry, and the thunderous echoes and grating noise awakened within my head are relieved by no other sound, so intent are you upon your "diagnosis." At last the examination is over. "Will it be a large filling, Dr. A.?" tremblingly. "Yes, madam; quite large." "Do you think it will be painful?" I ask next, as you are assorting some instruments. "Well, I am not sure. I am afraid it will be, though; the nerve seems quite exposed," you answer.

The last ray of hope gone, with the very marrow in my bones seeming to chill and retreat, I plant my feet firmly against the support, clinch both hands on the chair arms and preserve, if possible, a rigidity that extends the length of my spinal column, and give myself into your hands, counting the moments till my release shall come. And really this is no "make believe" scene.

Several years ago one of my jaw-teeth needed a compound filling, and the two and a half hours consumed in its building, set my nerves "a quiver" for the night and the day following. Three days later I went by appointment to have another filling.

"Do you know, Dr. ———," I said, after the preliminary thrusts, "I have dreaded coming to-day with the memory of that terrible tooth so fresh in my mind? But, then, to be sure, this won't be as bad," eyeing him narrowly as I said it. "I regret to say that I find the cavity quite a large one, and I am afraid it will be even more painful to work on than the other." "Oh," I said, "how am I going to stand it? Why, I will have the present pain intensified by the thought of every pang I endured before; and to think that it is to be worse—oh!"

And if the contemplation of a miserable countenance tends to retard a dentist in his work, he had much to endure from me. When I thought the work half done—I had been led to expect so much—to my surprise he began to put on the polishing touches. "You don't mean to say that you are nearly through?" I asked, as he turned away for a small box. "All but this pumice-stone powder," he answered, smiling, "and I am glad to find you still alive." "You owe me reparation for unnecessary suffering," I said, "The tooth has not been nearly as painful as the other, and if you hadn't talked to me as you did, I would have had some courage to sustain me."

Now, you say, enumerate some of the most important points you wish us to gather from what has been written. Very well. By all means cultivate cheerful manners, and when your patient is seated, keep your preparations and instruments as much out of sight as possible; and if you can conceal them in no other way, do so by a flow of pleasant conversation. Now, as you are ready and stand beside the chair, do not stop talking, and if she keeps you waiting and her mouth shut, with an almost unconscious pressure of your fingers, signify that you wish her chin lowered. Why, do you know, I think a great deal depends upon the circumstances amid which you open your mouth in a dentist's office? It seems like the first *break* somehow. You belong to yourself even after you are in the chair; but when once he gets his fingers in your mouth, you are his. So, most mighty operator, "be gentle with your captives," and make your first move with caution.

"But no man can do two things at once and do them well," objects some one, and it is certainly much better that the work should be first-class, even if silence does become monotonous.

Be that as it may, one of Nashville's most successful dentists has cultivated the habit of talking while at work, not continuously, to be sure, but he *talks*, and I find myself, when under his hands, looking forward to his next remarks as something to relieve the tedium with an earnestness that does not leave the pain in undisputed possession of my thoughts. I don't remember anything very brilliant or eloquent that he ever said to me; perhaps the most of it was commonplace enough, but as it answered the purpose for which it was intended, that of diverting my mind, not instructing it, it seemed perfect in its way at the time.

Next, avoid the mistake made by my friend in putting an undue estimate on the work to be done before you are sure what it is, and at no time impress it on your patient, unless, indeed, it is the welcome news that it amounts to almost nothing.

"But your friend did not know that the second filling would hurt you less than the first," No, of course not; but if he didn't know it would hurt less, he didn't know it would hurt more; all of which proves that he didn't know anything about it, either the one way or the other.

I think you can hardly be too careful of your manners, and it should belong as much to your stock in trade—nay, more—than to the bright carpet, tasteful walls, or the expensive, velvet-clad chair which you have provided. There are two distinct sets of manners with which I have met, and I am to this day undecided as to which was the most *telling*. One, I should term the *reassuring*. The gentleman who possessed these was all gentleness. His voice was low and kind, his touch tender. You felt yourself a little child, him a sympathizing father. "I am not going to hurt you a bit more than I can help," he would say. "I know this place pains you, but I will be as quick as I can to do the work. Now, then, the worst of that is over. I hope I will be through this next before you expect it." A little silence, and then, "Now, that wasn't as bad as you thought, was it? By the way, are you familiar with the literary columns in the *Nashville American*? I think you can gather quite an amount of information from them almost unconsciously, and it takes but a small share of your time each Sunday. I was interested some weeks ago by an article on the coinage of words; I found Miss Murfree not only credited with a list of newly-coined words, but with introducing some into print that belonged to our vocabulary when we were children. Ah, I see I gave you quite a turn then; never mind, that won't happen again. I am going to put

in the gold now; the tooth is clean and ready. Speaking of Miss Murfree, I was so amused to find in her 'In the Clouds,' I think it was, the work 'sick,' to 'sick' a dog on in a fight, you know. I don't remember ever seeing it in print before, and yet what boy has not used it?"

So he talks on to the end, and I must add that any man who has brains enough to be entrusted with the filling of a tooth has brains enough to carry on a conversation like that. The trouble, is, not realizing how much it helps; few dentists ever try.

The second "set" I hardly know how to denominate. Dr. ———, who is most impressed with the manners characteristic of it, didn't pay very much attention to your imaginary woes, or "sure enough" ones either, reasoning, I suppose, that if people can be scared into non-existing pains, they can at least be pooh-poohed out of a few real ones.

"Oh, come now," he would say, "you are not going to make mountains out of mole-hills, are you? Why, of course, it will hurt you to have a tooth worked on, but not more than you can stand bravely. Now, if you had teeth like Mrs. B., who was here yesterday, you might have cause for all this alarm; her teeth are soft and chalky, but my! you have good, hard teeth, and besides, you know I can work pretty fast when I have a quiet, well-behaved patient in the chair. So let's see how soon I can get through, and don't you groan and twist unless the pain warrants it, else I will have a joke on you, and I will be sure and tell it where you least want me to."

Some of you may say: "Oh, after all, this is a great deal to write about such a small thing; why, the pain is not always *excruciating*; every person who comes to us doesn't need a nerve or a tooth extracted, and it doesn't seem likely that people are scared so badly as you would have us believe.

But, indeed, dental friends—and you *are* good friends to the human race—I know whereof I speak, both from experience and from others with whom I have talked. Said one lady: "It is difficult to tell just how much my courage depends upon the expression of the face bending above me." Said another: "As long as Dr. ——— is within my reach no other man shall work on my teeth. He doesn't frighten me, and is so considerate and kind that I am sure I don't mind the pain half as much as I would otherwise."

It is not only a kindness to lessen, by words and actions, the distress of a brother, but if it tends to make the dentist popular and give him there putation of "not hurting much," it is a capital which will prove well invested, an advertisement that will draw.—*The Dental Headlight*.

MAKING PLASTER CASTS.

BY FRANK L. R. TETMORE, M. D.

Demonstrated before the Kings County Pathological Society.

Physicians often desire a cast of a pathological specimen, anatomical dissection, or of a part showing an abnormal condition before an operation, and to show the result after an operation.

Pathological specimens cannot always be preserved to show to an advantage, nor is it convenient to remove them from the preserving fluid. I will try to demonstrate a simple method by which a plaster cast can be made accurate, and with very little skill to be required.

1st. Soft preparation of any kind, as anatomical dissections, frozen sections, dissections of the brain without being hardened; the viscera or any organ in situ, tumors, deformities or any pathological condition, where the patient can bear the heat of the paraffine.

Soft preparations, or in fact preparations of any kind, should not be put in any fluid to harden before casting. All objects for reproducing in plaster must be free from all excessive tissue, fat, etc., and nicely dissected, all surface moisture absorbed with blotting paper or a towel; all soft projecting parts to be suspended to a light framework of some kind with threads.

If a preparation of a pathological specimen is the object, after it is all prepared as above, lay it on a smooth surface—a large plate or plate of glass is better. Arrange to show every part—under cuts will not prevent in any way a perfect case. With a soft camel hair brush paint a very thin coat of oil over the preparation evenly, leaving no excess of the oil.

To make a cast of any part of the living body, apply a strong solution of cocaine when there is an exposed surface. In some cases it may be necessary to give an anesthetic when the skin is not removed in any way; a $\frac{1}{20}$ solution of carbolic acid applied to the part two or three times will act as a local anesthetic. Apply a thin coat of oil, applying the brush in the direction of the hairs; when there is much hair, apply a thin solution of soap.

2d. To make a mold, melt paraffine in a water bath. The heat required will be above 130° F. Use a soft camel-hair brush about one inch wide; dip the brush in the melted paraffine and apply quickly to the object, only touching the tip end of the brush, and with one stroke apply the melted paraffine in this way to every part, and continue till enough paraffine covers the part to make one-quarter inch in thickness.

Great care must be taken in applying the first coat, as the paraffine will harden so quickly that the brush will draw the preparation out of place.

The mold may be cooled with cold water, and when hard the preparation can be very readily removed. The mold must be washed clean at once with cold water, when it will be ready to be filled with plaster.

3d. Procure fine dental plaster of Paris, which must be free from any pieces of wood or paper. It is better to sift through a fine sieve. The mold should not be oiled. If the cast is large, mix only enough plaster at first to cover the surface of the mold about $\frac{1}{4}$ inch thick. If small, enough may be prepared to finish running the cast. Select a suitable vessel of earthenware, and put in a sufficient quantity of water. Stir in the plaster gradually till it is of the consistency of cream, pour into the mold, and handle it so that all the surface is covered. Then pour out the liquid plaster, pour in and out till the plaster sets. If it is a large surface, paint the plaster over with a soft brush, wash out the brush before the plaster sets.

When enough plaster has covered the surface and sets to a thickness of about $\frac{1}{2}$ inch, with large casts one inch—make a bed of plaster on a plate of glass, turning the mold on this, which will form a smooth surface for the under side of the base. A little sulphate of potash added to the water, 1 dram to the pint, will make the plaster harden quickly.

4th. When the plaster is hard, after waiting about one hour, immerse the whole in a vessel containing boiling water, which will melt all the paraffine, leaving the cast free. Pour boiling water over the cast after it is removed from the vessel, which will leave the cast white and clean. The paraffine may be used any number of times. It can be readily removed from the vessel when cold.

The cast should be turned up, and set away to harden and to evaporate the moisture, which will require about a week or ten days if kept in a warm place. It can be coated over with shellac varnish and colored over with oil colors.

It will be a pleasure to give any information to those who may be interested in making casts.—*Brooklyn Medical Journal*.

The Dental Hospitals and Their Smoking Concerts.—We have received accounts of two concerts, one under the auspices of the National Dental, and one under those of the London Dental Hospital Students Society. Both events appear to have been successes and to have secured large attendances.—*British Dental Journal*.

This is the way a dignified editor of a Dental Journal signifies satisfaction, and gives popularity to the fashionable nuisance of tobacco smoking; and does it because it is fashionable, for if it were unfashionable he would be disgusted with such a performance as above described, or at least would have been ashamed to give it public recognition.—ED. ITEMS.

O. D. S.

BY COX.

It a good thing for the dental profession that there are many journals published in its interests, for there is seldom a new thing of merit brought out that some of them are not willing to help.

It is therefore very gratifying to the 70 per cent of the practicing dentists in this land who are without a title, or D.D.S., that the ITEMS has taken the stand it has as regards "*The Practitioner's* course." The projectors of this course must sooner or later come to it, and issue a title of merit to successful attendants. And what better is there than the title of D.D.S., to those who show they deserve it?

The untitled dentists cannot leave their business long enough to go through the course that is perfectly proper for raw students; and such expense of time and money should not be exacted.

A short time ago, the dean of a certain college said: "All my professional friends are dentists without degrees, and I am certain all are good dentists in every sense. But they have neither the time nor money to spend to attend an ordinary two years' course to obtain a degree. I am going to do all in my power to arrange a practitioners course for untitled dentists who have practiced ten or more years, and can prove they are entitled to a degree, both as operative and mechanical dentists, and see if our faculty will not arrange a course for them."

This is a good idea; let us have such a course—honorary titles are allowed in other professions why not in this?—ED. ITEMS.

About Societies.—In a letter to the *Dental Review* Dr. Ottolengui, among other things, says: "What we need is, not admission to the meetings of medical men, and a right to share in their councils, but, rather, such a proportion of medical knowledge as would make us less mechanical in our limitations, and more able to diagnose and treat diseases which, appearing in the mouth and within our allotted sphere of action, nevertheless are really but expressions of constitutional disturbance elsewhere. In a nutshell, the necessity is for more knowledge, not more societies."

Further, in regard to the manner in which our societies are conducted, he says: "We should sit in council as a body of scientists, not as a social body convened for pleasure. That is the one thing in my opinion which most militates against the usefulness of our association meetings. The majority seem always in a hurry. Adjournment, whenever suggested, is always vociferously agreed to, and even before the motion is carried, the men are on the move to escape. This is not only unscientific; it is indecorous, and is the outcome of this one fact: We are egotists. We go to teach, and not to learn, the result being that we neither teacher nor learn."—*Ohio Journal*.

INCIDENTS IN OFFICE PRACTICE.

MESSAGE FROM BEYOND.

The following verbatim note, sent a Western dentist by one of his patients who had been "gumming it," is about as expressive of the real merits of the case as anything we have ever seen, and think it should have a permanent place in the archives of our profession as literature :

DESERT ISLAND, County of Starvation, City of Soup.

DEAR DOCTOR:—I am dying by inches, that most horrible of deaths, starvation, to which the delirium tremens is as nothing. It's been soup, soup, soup, till my soul abhors soup. Can't you give me some poor, old, deceased woman's molars till mine are made? Something to grind on to sustain life, otherwise you will soon have the pleasure of attending my "Heavenly ascension." What I want is a temporary set of teeth of some kind. Can you accommodate me?

—*Practical Dentist.*

Yours in the "SOUP."

To Prevent Infection from Tuberculous Patients.—W. S.

SMITH says: We are told that in the blood of the tuberculous patient we find the spores of the bacillus, and in the sputa we find the spores and bacilli. We might reasonably suppose that both would be found in the saliva. How shall we obviate infection? I would suggest that we put in the spittoon half ounce of sulphite of soda, before it is used by the patient, and, when it is to be emptied, put into it half ounce of acetic acid, which will unite with the soda, and set free sulphurous acid gas. The vessel should be covered until effervescence ceases. The evidence we have that sulphurous acid gas destroys the bacilli is sufficient to uphold us in this procedure. For cleansing the burs, before putting them on the wire wheel of the dental engine, dip them in wood creosote or an alcoholic solution of menthol, either of which has been proven to be a bactericidal remedy. Lastly, never have an open pitcher or bucket, for the purpose of containing drinking water, for we find from the investigations of Cadeat and Maleat, that the disease is more surely developed through the use of a liquid vehicle containing the bacilli, than by any other source, the water becoming contaminated by the dust settling upon it.—*Dent. Review.*

"Do you wish to be great? Then begin by being little. Do you desire to construct a vast and lofty fabric? Think first about the foundations of humility. The higher your structure is to be, the deeper must be its foundation. Modest humility is beauty's crown."—*St. Augustine.*

FOR VARIETY.

NEW ALBANY, May 27, 1889.

Dear Doctor.—Your invitation of May 24th, to write something for “the boys,” was duly received. I appreciate your kindness and politeness. The general tenor and scope of THE ITEMS OF INTEREST I approve. It is seldom a prosy journal, tho’ it has many pros and cons. It sometimes climbs into the Muses, and the Promethean fire in your soul scintillates above the common herd of professional mortals who pull teeth. This is one of the reasons why I like your journal and you. I think of you in Vineland with peculiar interest—as you are writing for the benefit of we, hungry mortals, delving amid the ruins of human teeth. To this thankless task, you invite others to assist you—to “bridge-work,” your labor, by their contributions. Haven’t you had enough of microbes and the exegesis of bridge-work to fill pages, so that I might be spared to say anything to “the boys”? Tho’ “old stagers” as we both are getting, I can’t afford to lecture “the boys” much, for they are doing pretty well, and we can look on, contenting ourselves with their achievements.

You must not think I am “retired,” or one “whose sands of life are near run out,” for I am “lusty as an eagle,” only I can’t flop quite so high as you can! I am busy every day. Nothing has disturbed my serenity lately, but the article in this *Dental Review* for May, on “Tobacco.” The dense ignorance is so apparent that I guess Harlan wants me to answer it, and perhaps I will. What do doctors’ observations on the oral cavity amount to, any how?

I grieve to say that I may furnish a little copy for your journal, if I can find time.

Nothing daunting me, I remain yours truly,

W. F. MORRILL.

To Prevent Engine Cords Slipping.—Dr. George E. Rice says: Many have been annoyed by the constant slipping of the driving-belt on a dental engine when used with much power. I have discovered by experiment a very simple way to prevent slipping of the belt entirely. It is by the application of resin. It may be applied to the belt as a powder, or better by holding a piece of common resin in contact with the belt while the engine is running. The resin promotes friction between the belt and wheels in such a way as to make it possible to drive the engine with great force, allowing at the same time the use of a very loose belt, and with no perceptible slipping. It can be used on belts of any material, and it seems to me that this simple device will be found fully as efficient as the patent rubber rims that are sold for the purpose.—*Practical Dentist.*

WHY DID THEY ACHE?

15 UPPER BROOK STREET, LONDON, W. ENGLAND.

May 16, 1889.

EDITOR ITEMS OF INTEREST:—

In your issue for this month I notice a query, "Why did they ache?"

While having no desire to be captious or hypercritical, with your permission, I will reply to that question the way it appears to me.

In the first place the diagnosis was worse than a farce, and had the "hesitation" continued long enough for the patient to have sought more capable advice, the inflamed "periosteum" of a tooth would still have been among the things to be discovered.

"Ought I to have extracted them?" On such meagre data it would be difficult to say, but would heartily recommend the writer of the query to the announcements of the many good dental colleges, where instruction may be had that will assist any thorough student to not only diagnose such a case correctly, but to be able to write an intelligent history of it, and at the same time teach him that because a tooth aches, that is no reason why it should be extracted.

Yours truly,

W. MITCHELL.

Obtunding Pain in Extracting.—DR. A. T. PEETE says: In all cases of extraction, three preparations which I use have proved very valuable. Peacock's Bromides (not a patent medicine) is the best sedative I have ever met; it is a great blessing to nervous patients. Campho-phenique, or carbolate of camphor, is invaluable for application to sockets after extraction; its effects appear almost magical in relieving pain. I value it even more as an obtundent than as an antiseptic. Wine of coca is the correct thing for nausea, caused by extraction; a dose of two ounces gives prompt relief.—*Archives*.

Method of Protecting Cement Fillings.—I have recently had some cases where it was desirable to keep a tooth dry for some time after filling and have devised the following method. By its use you can do away with the disagreeable mouthful of rubber dam, and allow your patient to sit comfortably in a chair and read, while you attend to others; or you can operate on other teeth in the same mouth.

The rubber dam is applied and tied as usual; after finishing the filling, or whatever is to be done, the dam is gathered over the crowns of the tooth and tied tightly with a ligature as close to the tooth as possible. The dam above the ligature is cut away and you have your tooth in a tight rubber bag, and can keep it there as long as you wish, with very little discomfort to your patient.—DR. CODMAN, *Int. Jour.*

Boys and Tobacco.—In an experimental observation of thirty-eight boys of all classes of society, and of average health, who had been using tobacco for periods ranging from two months to two years, twenty-seven showed severe injury to the constitution and insufficient growth; thirty-two showed the existence of irregularities of the heart's action, disordered stomach, cough, and a craving for alcohol; thirteen had intermittency of the pulse, and one had consumption. After they had abandoned the use of tobacco, within six months' time one-half were free from all their former symptoms, and the remainder had recovered by the end of the year.—*Science*.

A Quill-barb.—Dr. C. F. Rich, Saratoga, supposes that all dentists used Donaldson's nerve-bristles; but he wants to suggest something which he has used in cleaning root-canals with great satisfaction, and that was simply quill tooth-pick. We all have a horror of breaking drills in teeth, and all danger of this character can be averted by using the quill, which is one of the finest agents for the purpose, and it is almost impossible to break it. It can be cut down as fine as necessary, and if it is desired to carry cotton on it, it can be barbed. It can be used in any tooth that is open.—*Cosmos*.

John Edwards, an Illinois Central engineer, at Galena, Ill., who was supposed to be dying of quick consumption, in a paroxysm of coughing emitted from his throat a bony substance, which, on examination, proved to be a tooth. A few weeks previously Edwards underwent the operation of having his upper teeth extracted, preparatory to the introduction of an artificial denture, and during the operation, which was rapidly performed, one of the teeth, without the knowledge of either the patient or operator, dropt down the throat, it is supposed, and lodged in the windpipe, where it caused the irritation which was thought to presage consumption.—*Exchange*.

Gum benzoin has my preference over all other gums for dental uses.

I make an ethereal solution for gumming cottons, and for all purposes where sandarach has hitherto found a place.

Carbolated benzoin is excellent for dressing root and crown cavities antecedent to filling.—*W. S. Elliott, M.D., D.D.S., Hartford, Conn.*

In our discussion of the treatment of pulpless teeth, is it not more than likely that we go too far when we say "we do this to kill the spores and germs?" We know some things; but when we assume, let us say so. It sounds better at any rate.—*Odontographic Journal*.

THE INTERNATIONAL TOOTH CROWN COMPANY'S PATENTS.

EDITORIAL IN COSMOS.

The International Tooth Crown Company complains that our publication of the objects of the Dental Protective Association of the United States, on page 316 of the April issue of the DENTAL COSMOS, is erroneous in so far as it may be construed to mean that the validity of *none* of the patents of the said company has been established.

We have been studiously careful to give only correct information concerning the rights and claims of the International Tooth Crown Company. In the DENTAL COSMOS, for March, 1887, we gave the decision of Judges Wallace and Shipman in full, and in the issue for December following, we published a statement of the controversy, by Messrs. Beach and Gordon, the correctness of which has not been questioned. This statement was, that the two patents, Nos. 277,941 and 277,943, for "tooth crowns, etc.," to Cassius M. Richmond, and the patent No. 277,933, for "bridge," to Alvan S. Richmond, all dated May 22, 1883, were held invalid, and the patent No. 238,940, to James E. Low, for "method of supporting artificial teeth by bands cemented to permanent teeth," dated March 15, 1881, was declared to be good. Furthermore the Low patent was described as covering "a bridge attached to continuous bands, cemented to adjoining permanent teeth, 'whereby said artificial teeth are supported by said permanent teeth, without dependence on the gum beneath.'"

It was added, "As the matter now stands, any dentist inserting a Richmond bridge (according to the decision), infringes the Low patent; and an injunction would doubtless now be granted by any Federal judge on application, on the strength of that adjudication alone."

We have rehearsed these facts that there may be no misapprehension on the part of our readers as to their legal rights in the premises. In the editorial complained of, we quoted from the circular of the Dental Protective Association the statement of its object, which was said to be "to contest the patents of the International Tooth Crown Company, the validity of which has not been established." If the word "those" had been substituted for the first "the" in the quoted sentence, the meaning would perhaps have been clearer to the casual reader; but certainly no reader of the DENTAL COSMOS was justified in assuming that the meaning of the language was that *none* of the patents of the company had been established, for, as before stated, we had been careful to give explicit information as to which of their patents had been declared valid, and which invalid.

ARTIFICIAL CROWNS WITH METAL ROOT.

Editor ITEMS:—Having had an eighteen months' favorable test of an artificial *root* and crown, I beg leave to report through the ITEMS.

A lady, about 30 years of age, called to have a first superior left bicuspid inserted on a plate. As she was opposed to a plate, I examined her gum and the teeth adjoining the space as to the practicability of inserting a bridge or a tooth by the Younger method.

Finding that a bridge was not advisable, the idea came to me that a crown on a gold or platina root would be as agreeable to the alveolar tissue as another person's tooth; so I mentioned it to her, and after a thorough understanding of the operation and the uncertain results, she consented to the operation.

I fitted a Foster crown to the gum as accurately as possible. I now administered Mayo's vapor, put the crown in place, and with my engine drilled into the alveolus about a half inch; then, with a Howe tap, I cut a thread. I then removed the crown and cut the gum away where the crown pressed it. The patient recovered, and pronounced the operation "painless" to her. I then thoroughly syringed the pocket, dipt the platina screw in a 1 to 1000 solution of Bi. M. and screwed it home.

After thoroughly cleansing the gums I put the crown on and forced it tight to the alveolus with nut. She came back next day, as directed, and on removing the crown I found but little inflammation. I now cleaned the alveolus of the gum particles where the crown was to rest, and with gutta percha set the crown in place and screwed home.

I have seen it several times since, and it is as firm as when first set. I have two other cases of short standing which I will report as soon as I am satisfied with the results.

In these two cases I used a much larger screw root, with apex conical shaped, and at top of the gum the screw is reduced in size to pass through a Foster crown, and to receive a nut to hold the crown; the shoulder at the top of the gum supports the crown. The crown rests on the gum hard enough to prevent food from working under it.

Fort Scott, Kan.

A. J. STEVENS.

Sympathy.—We have many who want to be very correct, but are without heart. We should have that divinity in our heart that so overshadows ourselves that it will creep over our patients and show a sympathy with them, if we are true professional men. It is the heart that rules the intellect and causes the feeling that we call love or affection. We do not have enough of what the result is going to be to the patient; we think only of how much money we will get for it.

SMOKING DENTISTS.

One of our leading dentists told me a little story about smoking that may interest you. He said "that when he was younger he smoked moderately," that is three cigars per day, and he thought he was very considerate and nice about it, but one day one of his patients, a young lady of whom he thought a great deal, said to him, "Doctor I should think you would not smoke, your clothes always smell of tobacco smoke and you are obliged to stand so near your patients, some of them must find it very unpleasant."

He is a man whose effort throughout his professional life has been to secure the best possible results with the least possible inconvenience to his patients, and he has a great heart and a strong will to help him. He also confessed to think highly of the opinion of this particular patient and he did not forget the remark.

When he went to his laboratory for his usual smoke after supper, he found a new box of his favorite cigars sent him that day by a friend; he opened it, looked at the neat little row of brown beauties and put out his hand to take one, when the words of his patient flashed through his mind, (I know not what else,) but he drew back his hand, shook his head and said to himself, "No you don't, Richard," and he did not, and has not from that day to this, and it was twenty years ago.

With such an example of what will-power can do for a dentist, with the ambition we all have to be first-class dentists, and knowing that "without proper conditions we cannot expect certain results," you must agree with me when I say, "Let's don't smoke."—*Mrs. E. E. C., in Archives.*

Dental Colleges.—I was young enough, and ambitious enough once to conceive that ideal dental college, and endeavored to build it. I fondly believed that such an institution could be so organized and conducted that only selected material would be allowed to enter; that its curriculum should embrace so much of all the sciences as it was necessary for a dentist to know, and that when the student graduated, his diploma should be a passport to distinction in his profession the world over; that the mere fact that he had attained to the distinction of that diploma would be instantly recognized as proof of superior ability. But my dreams came to an end, for dreams of the future they were. I was in advance of the generation. The majority of the trustees of that institution, after a three years, trial, could see no reason why that college should attempt anything more than dental colleges; "it wouldn't pay," and immediately shrank to the level of the common-place, and there it remains.—*N. W. Kingsley.*

For Our Patients.

PROFESSIONAL ADVICE.

Here's a little *extract* for the youth,
 Who would *vent* his bright hopes in a *venture*,
 And is *aching* to *pull* his first *tooth*,
 From some painful and carious *denture*.

You may find it a pretty hard *pull*
 To *draw* from the world your first shilling,
 Because the profession is *full*
 Of men whose *profession* is *filling*.

'Tis a life of *severe applications*,—
 To the *nerves* rather trying (*in killing*),
 And you'll have a good *drilling* in *patience*,
 When *patients* complain at the drilling.

You will make *wrong impressions*, a few,
Incidentals all meet at the start,
 For to *nature* be ever so *true*,
 You are bound to be *false* in your *art*.

Would you win some success in *degrees*,
 On *degrees* do not place much reliance,
 The most *feasible* ways to your *fees*
 Is with skill to *apply* your *appliance*.

D. W. McCourt.

ALL ABOUT AN ACHING TOOTH.

"Can thee extract that tooth!" pointing to a decayed third inferior molar, "without inflicting much pain?" asked a staid, elderly Quaker of a dentist.

"I will do the best I can for you," the dentist replied.

"But what is thy professional opinion in regard to the severity of the operation?" he asked.

"It may hurt a little while getting the forceps on the tooth, but apart from that, I do not apprehend that the operation will cause you much pain."

"Then I will let thee try thy skill, and I shall expect thee not to disappoint the hopes thou hast inspired," said the Quaker, while seating himself in the operating chair.

The dentist had not been long at his work before the clarion tones of his patient's voice indicated the earnestness of his effort. The tooth was more difficult to remove than he imagined it would be, and when

the task was finally accomplished, and the knight of the forcep had recovered his mind, he said :

"The operation has been decidedly more protracted and severe than I expected it would have been, and I fear that you experienced considerable pain."

"Thy fear is well founded," the Quaker replied petulantly, "and if thy professional knowledge and skill were equal to thy presumption, I should feel better satisfied with thy performance. Instead of hurting me a little, as thee promised, thou hast inflicted upon me very great pain."

"Well, I am sorry," said the dentist, in a conciliatory spirit, "and I hope you will forgive me."

"I can forgive thee, friend, but I can never forget how thee wiggled my jaw. Here," handing the dentist fifty cents, "is thy fee, and permit me to advise thee to be more careful of thy word in the future, if thou would'st avoid that place where gnashing of teeth, instead of extracting them, will be the chief occupation of its inhabitants.—*Practical Dentist.*

A Dependent Citizen.—The following story is told of a well-known member of the bar in Allegeny County, New York, than whom there never lived a gentler, kindlier spirit. With his scholarly attainments and profound knowledge of legal lore, he possessed the simple dependent nature of a child ; and, it may be added, a child's utter guilelessness and faith in his kind. His wife, fortunately for the worldly success of the pair, was shrewd and practical in a marked degree ; upon her strong independence of character Judge C—— leaned heavily, except within the domain of his profession, where, curiously enough, his opinions were singularly prompt and infallible. In the domestic and social circles, however, he deferred to Mrs. C—— in the simplest matters, and so habitual had this state of things become that it did not occur to either of them that there was anything unusual in it. From donning his winter flannels to leading a card at the whist table he never pretended to act without "Helen's" sanction and advice. But one day he showed his condition of mental servitude in a really astonishing way. He was suffering from toothache and his wife sent him to the village dentist for relief. Obediently he went, got into the chair, and opened his mouth for the preliminary examination. "Which tooth is it aches, judge ?" inquired the dentist, poised the forceps. There was a moment's hesitation ; then the judge sat up from his reclining position, and looking innocently at the dentist, said, in good faith, "Well, now, I don't know ; I'll go home and ask Helen."—*Harper's Monthly.*

AN INFERNAL PRESCRIPTION.

There was once an English doctor whose morning levees were crowded beyond description. It was his pride and boast that he could feel his patient's pulse, look at his tongue, probe at him with his stethoscope, write his prescription, pocket his fee, in a space of time varying from two to five minutes. One day an army man was shown into the consulting room and underwent what may be called the instantaneous process. When it was completed the patient shook hands heartily with the doctor and said: "I am especially glad to meet you, as I have often heard my father, Colonel Forester, speak of his old friend, Dr. L." "What!" exclaimed the doctor, are you Dick Forester's son?" "Most certainly I am." "My dear fellow, fling that infernal prescription into the fire and sit quietly and tell me what's the matter with you."

There are few prescriptions but what would accomplish the most good if served in the same way. The late Dr. Bliss, however, was of the opinion that physic should be thrown to the dogs as the following amusing incident will show:

General Sherman was once a patient of the doctor. The doctor had been treating him for some time, and had given him several different kinds of medicine, when one day, on making his regular call, the general said to him:

"Doctor, I don't seem to be getting any better for all your medicine."

"Well, general," replied the doctor, jocosely, "perhaps you had better take Shakespeare's advice and 'throw physic to the dogs.'"

"I would doctor," replied the sick man, as he turned his head on the pillow, "I would, but there are a number of valuable dogs in the neighborhood, and I don't want to kill them off."—*Practical Dentist.*

A Society Lady accompanied her daughter to a dental office, to have a loose root extracted.

"Now," said the mother, after the young woman had tremblingly removed her wrap and bonnet, "sit down, and let the doctor take out that tooth, that's a dear."

"It will hurt, I know it will," she said peevishly.

"It won't hurt at all, precious, I know; there now, will it dentist?" said the mother, looking appealingly at the doctor.

"Only a trifle—not more than the prick of a pin," the doctor replied.

"It will break my jaw, I know it will," sobbed the patient, "and what will poor, dear Harry (her lover) say? I won't have it out, there, now," and the tears ran down her cheeks, making deep tracks in the cosmetics which covered them.

"Is there any danger of breaking the dear child's jaw?" asked the mother, with an anxious face.

"No!"

"There, now, Celestine, the dentist knows, so come, that's a dear, have the tooth out like a brave girl, and I'll tell Harry what a plucky little precious you are."

"Harry would never forgive me, I know he wouldn't, if I had my jaw broke," she whimpered. "It would kill him, I know."

"But it won't break your jaw, will it, doctor?" said the mother, again appealing to that gentleman. "Come now, have the dentist take it out and see how thankful Harry will be because you are a brave little darling. There now, don't cry so, it won't hurt, I am sure it won't."

"It would break poor, dear Harry's heart, I know it would if he was here," she said in broken accents, "for he says it kills him to see me suffer, so I won't have it out, there, now," saying which she languidly left the dental chair.

"Do you really think it would break darling's jaw to have the root taken out?" she asked the dentist, in a whisper, when her daughter had gone into the parlor.

"Well, madam, to tell you the truth, I can give you no encouragement in regard to that matter. Your daughter, evidently, has a very—tender head, and the jaw, you know, is correspondingly soft—tender, I mean."

"Bless her heart!" exclaimed the mother, "I was afraid all the time that something awful would happen if she had that tooth out. Do you think," she continued after a pause, "that it will be safe to pull the tooth after she gets older?"

"If the tissues don't continue to soften," the dentist replied, with an effort to conceal his mirth.—*Practical Dentist.*

The parents, guardians, or whoever have the supervision of children, should be thoroughly impressed with the absolute necessity of having the teeth of the little ones carefully examined by a dentist at least twice a year. If, on an examination, there are any cavities, they should be filled with some quick-setting alloy. I say alloy because children are restive and cannot endure confinement in one position for any length of time, therefore gold or tin-foil is inadmissible.—*Dr. E. J. Church in Ohio Journal.*

GEMS OF THOUGHT.

"Not myself, but the truth in life I have spoken;
 Not myself, but the seed that in life I have sown
 Shall pass on to ages, all about me forgotten,
 Save the truth I have spoken, the things I have done."

Editorial.

DEFINITE THOUGHT.

Much mental labor is lost, or at least wasted, through a lack of definiteness. This is suggested by noticing the apparent lack of aim often manifested in considering decay of the teeth.

Toothache is a symptom, and as such may suggest any one of several morbid conditions. A brief conversation with a layman, intelligent in many lines, but certainly not in pathology, may make this thought clearer. What is good for jaundice, doctor? said he. That depends on the cause, we replied. This is a case of real yellow jaundice, said he. Why can't you tell me what to do for it? Well, we replied, jaundice is not a disease, but a symptom, and may be caused by different states. Jaundice not a disease! said he. I tell you it is, and a hell of a disease, too. I don't see how you ever cured so many cases, while you know so little. And thus we ended conversation.

But may we not forget that dental decay, in any of its varieties, is a symptom of a morbid state, and not a state, itself? And while it is our duty to head off the decay by timely and appropriate filling, is it not also incumbent on us to remove, if practicable, the morbid condition which causes the decay? To do this, each character of decay that comes under our care should be closely observed and definitely studied, as this is a necessary step in finding out the nature and character of the diseased condition causing it. We take for granted that we all agree that no tooth is so badly formed and developed that it goes into decay in or with a perfectly healthy environment.

And when we have thus closely and carefully studied one case of decay, and have succeeded in removing or neutralizing the morbid condition causing it, it does not follow that this study and its corresponding treatment will, as a matter of course, answer for the next case. For a few moments let us think of caries just as we find it in the mouths of our patients from day to day. Forget, if we can, for a little, how the books describe it, and how the societies talk about it. No objection to books and societies at all; but just now we want you and your patients only.

Here is a case—look! the enamel is gone, and something is wrong with the subjacent tooth material. A cavity? Well, in a certain sense, yet *filled*, or nearly so. The filling is neither gold, tin, nor amalgam. On careful examination we find it is the animal substance of which the tooth was composed, the mineral substance having been dissolved out. The lime salts are gone, and we know they must have been in solution before leaving, or they could not have got away without displacing this

organic network work of animal tissue now dead. Nobody believes that a flock of little micro-bugs crawled in among these organic fibers and come out again each carrying a lump of lime leaving the organic substance undisturbed because not fond of it. Nor does any one now believe that a grove of little micro-bushes grew there till their roots took up all the lime, leaving the organic structure as the residuum of an exhausted soil. We are beyond all that. We are not discussing the germ theory. But germs, secrétions, accidental contact, or what not, all agree that here is evidence of chemical action, and that in this case its force was mainly exerted on the lime salts. Possibly an acid, then? Yes, possibly, and if made by microbes, we care not; and if so, we care not if it is from their secretions, excretions, or putrefactions. Chemical action, tho? Yes.

But see another case. Almost the only points of its resemblance to the one just considered is that it is in the mouth of a patient, and a tooth is involved. Here you have a cavity not filled with organic material, but partly filled with debris from dentine and, perhaps, accidental foreign matter from the oral cavity. The destruction of dentine is complete as far as it goes. The destroyed tissue may not be all removed, and this may be because it is not in perfect solution, as then it would be carried out by the saliva and other liquids. There is here, too, definite proof of chemical action. But in the name of germs, microbes, acids, alkalies, secretions, excretions, and company, what must be the cause and process of this decay? All must agree that the action is quite different from that shown in the first case considered here. And the science of chemistry will state positively that there must have been a different re-agent for "chemical action is definite in its nature." And pathology demands that we find out the re-agent in each case, while therapeutics demand our prevention of its ravages.

We are all more or less worried by the almost uniform expressions, from pen and tongue, used as if dental decay were a unit. Nearly all refer to dental caries as if, when you have gained full knowledge of one case, you are master of the whole subject. But can any who carefully examine for themselves believe that the two cases described above are caused by the same re-agent?—that their immediate or exciting causes are identical? The one has lost its inorganic mineral substance, the other its organic animal substance.

But here is a third case selected, of course, to make our office clinic the more instructive. It is not more like either of the preceding cases than is consumption like yellow fever or smallpox. There is a cavity, perhaps; but not much of the enamel is gone. The semi-transparency of the enamel shows that the dentine beneath it is dark colored, sometimes black. Neither dentine nor enamel is much broken down,

and yet the condition is not normal. The prognosis has been slow. Chemical analysis may show no decrease in the weight of lime salts—possibly there may be a slight increase, which increase some claim is due to the fact that it takes forty parts of sulphuric acid to replace twenty-two of carbonic acid. In this case the organic substance seems to be carbonized—turned into charcoal, instead of having been carried away in solution, as in the first case here considered, or disintegrated, as in the second case. This variety is much more likely to be superficial than either of the others, and, progressing less rapidly, is not so likely to destroy a tooth. The pulp is not exposed by this variety as often, in proportion, as by the others, partly because of its slowness of penetration, and partly because of its color soon attracting the attention of the patient.

Now, no one will claim that the portion affected by this kind of caries is in the normal chemical condition of tooth substance. And if thus changed, there has been chemical action. What chemical action?

Now we appeal to all who have practiced operative dentistry with their eyes open; that we have described three cases with which they are familiar. Tho we do not claim that they will find the caries as distinctly marked in all cases as above described; and all three of these varieties may be found in the same mouth, at the same time. It is not uncommon to find a broken-down cavity of black decay, of long standing, with a newly-formed one of white decay in the bottom of it. But such things will not confuse or mislead a careful observer.

The difference in color does not suggest the most noted points of difference in the varieties of decay, and yet this is important. The first variety here described is nearly colorless at first. It darkens by exposure; but never looks like "black" decay, and is never like it in other respects. The second is generally white.

When we hear that some brother has artificially produced dental caries, we have a right to inquire which kind. And if answered, we may take courage that he may enlighten us on the others, but not forgetting to thank him for that already done. Let the research go on. But let us remember there is a difference between the disintegration of a dead tooth and the caries of a live one.

Pennsylvania State Dental Examining Board.—The Pennsylvania State Dental Examining Board will meet for the transaction of business at Cresson, Pa., on Tuesday July 30, 1889.

Persons who intend to come before the board for examination, are requested to notify either the President or Secretary.

W. E. MAGILL, *President*, Erie, Pa.

I. C. GREEN, *Secretary*, West Chester, Pa.

THOMAS HENDERSON CHANDLER, A.M., D.M.D.

Dr. Chandler, whose portrait we present this month as our frontispiece, is an example of a thorough scholar. He left Boston's common school for Harvard and graduated in 1848, at the age of twenty-one. He completed his A.M. course three years later. Then entering the study of law, he graduated as L.L.B.

He did not practice law long before he was called to a professorship in the Boston public Latin School, where he taught three years.

We now find him knocking at the door of our profession. He entered the office of Dr. Isaac Wetherbee in September, 1853, and in due course, graduated in the Dental Department of Harvard. In 1869 he was appointed adjunct professor of Mechanical Dentistry in this school. Three years later he was made full professor of that branch, and in 1874 was chosen Dean, still holding his chair of Prosthetics.

He has stamp'd the school with his own energy, and is fast making it one of the leading Dental Schools of the world.

THE PSYCHIC LIFE OF MICRO-ORGANISMS.

A STUDY IN EXPERIMENTAL PSYCHOLOGY. BY ALFRED BINET. Translated from the French by *Thomas McCormack*, with a preface by the author written especially for the American edition. Chicago: 1889. The Open Court Publishing Company. Cloth, 75 cents. Paper, 50 cents.

M. Alfred Binet, the collaborator of Ribot and Féré, and one of the most eminent representatives of the French School of Psychology, has presented in the above work the most important results of recent investigations into the world of Micro-organisms. The subject is a branch of comparative psychology little known; as the data of this department of natural science lie scattered for the most part in isolated reports and publications, and no attempt has hitherto been made to collate and present them in a systematized form.

Special use has been made of the investigations of *Balbani*, *Claparède* and *Lachmann*, *Maupas*, *Ribot*, *Engelmann*, *Pouchet*, *Weber*, *Pfeffer*, *Kent*, *Dujardin*, *Gruber*, *Nussbaum*, *Bütschli*, *Lieberkühn*. The 18 cuts are illustrative of the movements, nutrition, digestion, nuclear phenomena, and fecundation of Proto-Organisms.

M. BINET's researches and conclusions show, "that psychological phenomena begin among the very lowest classes of beings; they are met with in every form of life, from the simplest cell to the most complicated organism." The author contests the theory of the distinguished English scientist, *Prof. George J. Romanes*, who assigns the first appearance of the various psychical and mental faculties to different stages or periods in the scale of zoölogical development. To

M. Binet there is an aggregate of properties which exclusively pertain to living matter, the existence of which is seen in the lowest forms of life as well as in the highest.

Died.—At Philadelphia, Pa., on Monday, April 15th, suddenly, of heart failure, Mrs. Bonwill, wife of Dr. W. G. A. Bonwill.

While the husband has been so long known to fame as a genius, and a successful dental practitioner, few, but those intimately acquainted with the family, know how much Mrs. Bonwill has contributed to that fame, by her quietly holding the helm in the midst of the storms of life; and always being responsible for that quiet restfulness such a man of high wrought nerves must need as a balance of power. As a mother, too, she has been the stay and the staff, the instructor and guide, the adviser and pride of her children. He might well say, as other fathers ought more often say, and as I have heard him frequently say, when his children came to him for permits or privileges, "What does mother say?"

The Association of Dentists was formed to resist the claims of the Tooth Crown Company. We have already secured description of many new cases, which will add valuable testimony in our favor, in the coming contests. Many have already joined the Association; we want more. The amount of money required for each one is very small. The fee, however, will remain at \$10.00 till a certain number is obtained. After that, it will be but just, and in accord with similar organizations that those who join shall pay a larger membership fee.

We feel sure, speaking from the advice of our attorneys, Messrs. Offield & Towle, that we will certainly be successful against the claims of the Tooth Crown Company.

Many are asking if it will not cost more to settle with that company if we *should* fail? We answer no; as the rates of licenses and royalty have already been established and such rates will be held as legal in cases of past infringements and future licenses.

If united, we cannot fail.

J. N. CROUSE, *Chairman*.

The Colorado State Dental Society, will hold their Third Annual Meeting at Denver, June 20th, continuing three days. A cordial invitation to the profession is extended.

Pueblo, Col.

J. N. CHIPLEY, D.D.S., *Cor. Sec.*

The Dental Society of New York sends out a fine pamphlet as their proceedings for 1888. We shall work this mine with interest.

Miscellaneous.

NITROGEN.

There is a substance which is invisible, which has neither odor nor taste, and in fact possesses no qualities of substance except weight and bulk, says the *Journal of Chemistry*. This is the gas nitrogen, which constitutes four-fifths of the atmosphere that surrounds us. It is apparently a dead and inert form or manifestation of substance, and yet it is perhaps one of the most important and useful of the elements, and if it should vanish from the universe, life would cease to exist. This apparent paradox is explained by the fact that by its combination with other elements the remarkable characteristics of nitrogen are awakened into action. The gas is neither poisonous, corrosive, explosive, nutritious, nor medicinal; but combined with carbon and hydrogen it forms the deadly prussic acid; with oxygen and hydrogen, the strong corrosive nitric acid; with hydrogen alone, the strongly basic alkali ammonia; with carbon, hydrogen, and oxygen, the terrible explosive nitro-glycerine; and, with the same elements in varying proportions, it forms the albuminoids, the gelatines, the glutens, and other strength-giving elements of our food, or the indispensable medicinal agents quinine, morphia, atropine, strychnine, veratrine, cocaine, and many others.

Tho nitrogen is tasteless, it forms an indispensable part of the flavors of the peach, plum, apricot, and other delicious fruits, as well as coffee, tea, chocolate, and tobacco. Without smell, it is found in many of the most powerful and delicious perfumes, as well as in the nauseating odors of putrefaction. Present in immense quantities in the air, it furnishes little or no support to vegetation; but combined with other elements the amount present in the soil determines its fertility and the amount of crops that may be raised on it. Colorless and invisible, nearly every dyestuff or coloring substance known contains it in variable proportions. Harmless and powerless by itself, when combined with another non-explosive gas, chlorine, it forms the most powerful explosive known, of which a ray of sunlight is sufficient to arouse the terrible destructive power.

And yet, notwithstanding the pre-eminent importance of this element in the affairs of life, there are but few of its combinations which we can form directly. Millions of tons of nitrogen are all about us, but not a grain of morphine or theine, gelatine or albumen, analine or naphthaline, can we make from it. Only the mysterious vital force working in the natural laboratory of the vegetable and animal organism can build up most of these molecules from their ultimate elements, and place the atoms of nitrogen in their proper position like the beams or stones of a building. Our wonder at the marvelous powers displayed by these organisms is none the less when we see what simple, common, and uncharacteristic elements are used by them in making up their wonderful products, and we can only say it is a part of the great and insoluble mystery of life.

Neither can we explain satisfactorily from a chemical standpoint the properties and reactions of this strange element. By itself it is

nothing, but united with other elements, some almost equally inactive, the combinations thus produced manifest the most powerful and positive chemical and physical properties. It is like the springing into life of dead matter; but there is no system of chemical philosophy which can give a reason why it is so. It is the part of the chemist to observe and record the facts connected with the properties of different forms of substance, and in time we may from these facts construct a rational theory, but we are still a long way from a clear comprehension of the phenomena of the universe. There are about as many things in heaven and earth still undreamt of in our philosophy as there were in Shakespeare's time; and the further we advance toward the end, the more the field widens and appears to be of illimitable extent.—*Scientific American*.

Bloodless Treatment of Ingrowing Nail.—Dr. Patin recommends the following procedure for removal of ingrowing toe-nail, which he has employed with excellent results in all of his cases. After thorough cleansing of the nail, a solution of gutta-percha 10 parts, in 80 parts of chloroform, is applied with a brush to the interstices between the nail and the granulations. This is repeated several times on the first day, and subsequently at longer intervals. By exercise of care and patience it will be found that the nail is gradually lifted from the under-lying parts, and can then be removed without pain with the scissors. If a properly fitting shoe is worn no recurrences need be apprehended. The solution applied in this manner exerts a double effect, the chloroform is anesthetic, and the gutta-percha acts mechanically, forcing its way between the granulations and the nail, and finally liberating it from its abnormal position.—*Gaz. des Hopitaux*.—*The Clinical Reporter*.

A Beautiful Experiment with Red Cabbage Leaves.—The *Practical Teacher* says: Cut three leaves of red cabbage into small pieces, and, after placing them in a basin, pour a pint of boiling water over them, letting them stand an hour; then pour off the liquid into a decanter. It will be of a fine blue color. Then take four wine-glasses—into one put six drops of strong vinegar; into another, six drops of solution of soda; into a third, the same quantity of a strong solution of alum; and let the fourth glass remain empty. Fill up the glasses from the decanter, and the liquid poured into the glass containing the acid will quickly change to a beautiful red; that poured with the soda will be a fine green; that poured in with the alum will turn to a pretty purple; while that poured into the empty glass will remain unchanged.

The hygroscopic quality of table salt, and its tendency to pack together in cruets and containers, may be entirely overcome by thoroughly drying the salt and intimately mingling with it a small percentage of dry corn starch or arrowroot. From eight to ten per cent. is amply sufficient for the most humid atmosphere (as on the sea coast), while a much less percentage of the starch is sufficient for inland points.—*St. L. Med. and Surg. Jr.*

A NEW GUNPOWDER.

A new gunpowder, the invention of Mr. Hengst, has recently been tested, and the results point to it as a promising substitute for black powder for military and sporting purposes. The new powder is prepared from straw, which is pulverized, chemically treated, and finished in granular form for use. It is claimed for this powder that it is smokeless, flameless, practically non-fouling and non-heating, and that both the recoil and the report are less than those of black powder, with superior penetrative power. From the powerful character of this explosive, which, weight for weight, is 150 per cent stronger than gunpowder, and is not explodable by concussion, it is probable that in a compressed form it will be found to be applicable to blasting purposes. In every respect it appears to be a powder of great promise.—*Scientific American*.

The Decimal or Metric System.—The metric system is about one hundred years old, it having been first proposed in 1790. Since its introduction it has been adopted by the following countries: France, French Colonies, Holland, Dutch Colonies, Belgium, Spain, Spanish Colonies, Portugal, Italy, Germany, Greece, Roumani, Mexico, New Granada, Ecuador, Peru, Brazil, Uruguay, Argentine Confederation, Chili and other South American States, Austria, Norway, Sweden, Switzerland, Venezuela, Hayti, Mauritius, Congo Free State.

Its use is permissive in Great Britain, India, Canada, and the United States.

There are no tables connected with this system; none are necessary; one unit is tenfold another unit. The whole system can be stated in a single sentence: Measure of lengths, in meters; measure of capacities in liters; measure of weights in grammes; using decimal fractions; measure of weights in grammes; using decimal fractions for divisions. The measure for land is the square of the measure for length, the square of a chain of ten meters giving 100 square meters as a unit for land measure; and the square of 100 meters is the agrarian equal to about two and a half acres.

The married women of Java dye their teeth black, which is supposed to be a mark of distinction. Their lineal descendants may be found among tobacco chewers. The women of the Marian Islands also blacken their teeth; also the people of Sumatra and Malacca, because they believe that men ought not to have white teeth like brutes. In some of the East India islands, the people gild the two front incisors of the upper jaw, and blacken the adjoining teeth. In New Zealand and some other Islands in the Pacific, there should be great scope for gold-crown operators, as a golden tooth is regarded as an ensign of royalty. There are no idiots, however, like those on our own continent, who have diamonds inserted into conspicuous cavities.—*Dominion Journal*.

Colorado has finally a dental law and one that seems to please the dental profession.